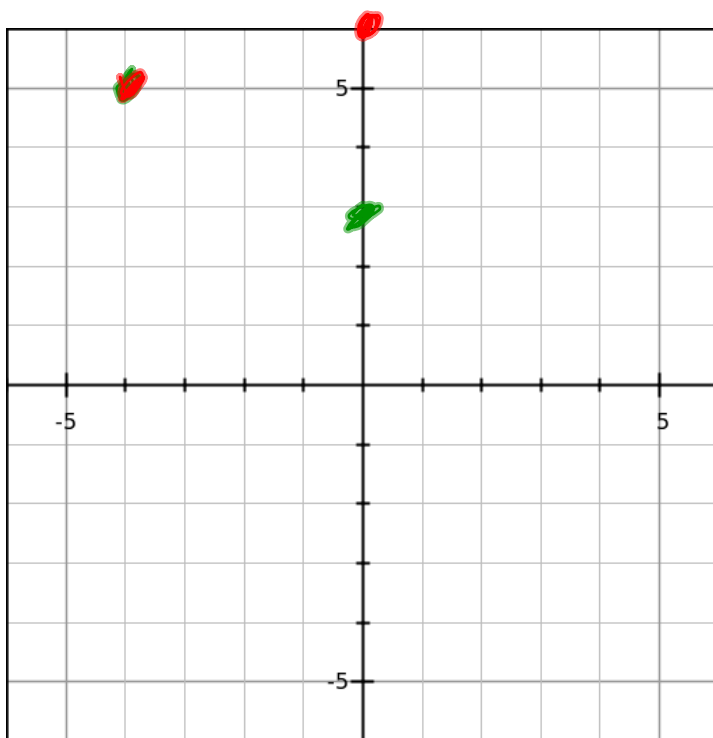


7.4 Applications of Linear Systems**When would you use the following to solve a system?****GRAPHING:****SUBSTITUTION:****LINEAR COMBINATIONS/ ELIMINATION:**



$$y = -\frac{2}{4}x + 3$$

$$y = -\frac{1}{2}x + 3$$

$$y = \frac{1}{4}x + b$$

Choose a method to solve the linear system. Explain your choice.

**1. $y = 2x - 1$
 $y = 4x + 5$**

**2. $5x - 9y = -13$
 $-5x + 10y = 62$**

**3. $y = 5x - 1$
 $2x + 3y = 96$**

Solving word problems using systems.

4. The sum of Sam's two favorite numbers is 50. Three times the larger number decreased by twice the smaller number is 60. What are the two numbers?

$$\begin{cases} x + y = 50 \\ 3x - 2y = 60 \end{cases}$$

$$\begin{array}{l} x = \text{larger \#} \\ y = \text{smaller \#} \end{array}$$

5. Carly bought 6 bracelets and 8 necklaces for \$140. A week later, for the same price, she bought 9 bracelets and 6 necklaces for \$132. What is the price of each?

$$6b + 8n = 140$$

b = cost of
bracelets

$$9b + 6n = 132$$

n = cost of
necklaces

6. William has a total of 35 dimes and quarters that are worth \$5.15. How many of each coin does he have?

$$0.1d + 0.25q = 5.15$$

$$d + q = 35$$

$d = \# \text{ of dimes}$
 $q = \# \text{ of quarters}$

7. Brevin is thinking of two numbers. The sum of the two numbers is 27. The larger number is 3 more than twice the smaller number. Find Patrick's two favorite numbers.

$$x + y = 27$$

$$x = 2y + 3$$

$x = \text{larger \#}$
 $y = \text{smaller \#}$

